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## *USER RATINGS OF A WEB-BASED, PERSONALIZED ALCOHOL MISUSE PREVENTION FEEDBACK PROGRAM*

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Alcohol Misuse Prevention Feedback Program**

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### **Abstract**

The use of web-based programs for health education, risk reduction, and health promotion can be a valuable tool in the effort to improve the health of a population. Providing personalized feedback through such a method can be particularly useful in alcohol misuse prevention efforts. A brief alcohol use feedback program was developed for members of the U.S. Marine Corps and user-satisfaction ratings were collected from 167 participants. Approximately 44% of the sample found the program to be useful or very useful and 46% of the sample reported that they were likely or very likely to recommend the web site to others. The Web-based format with tailored responses was preferred by 85% of respondents over other more traditional methods of alcohol training, and 80% of participants felt that the feedback was appropriate for Marines in their community. Significantly higher usefulness, likelihood of recommending the program to others, and overall ratings of the program were reported among younger and non-heavy-drinking participants ( $p < .05$ ). Results indicate that this computerized assessment and feedback program is a promising mechanism with which to provide personalized alcohol misuse prevention information.

## **Introduction**

The use of computerized technology, in particular the Internet, is an innovative mechanism for aiding health behavioral risk reduction, health education, and health promotion efforts (Barber, 1990; Cassell et al., 1998; Brug et al., 1999; Cloud & Peacock, 2001). Within the context of alcohol behavior education, brief interventions have been shown to be useful in reducing problem drinking (Bien et al., 1993; Borsari & Carey, 2000; Baer et al., 2001). Personalized feedback has been found to influence drinking behaviors by reducing alcohol consumption among heavy drinkers (Baer et al., 1992; Agostinelli et al., 1995; Walters, 2000). Brief interventions that use an immediate method to provide personalized feedback regarding alcohol use, such as using computerized feedback, are emerging (Cunningham et al., 2000) and have considerable potential to affect individual health behaviors. Computerized transmission of personalized feedback provides an innovative vehicle to assist in the effort to educate individuals about potential risks and to reduce deleterious alcohol-use behaviors by using popular technology (Baer et al., 2001).

Common types of feedback used in health behavior interventions include generic, targeted, and personalized feedback, with personalized feedback providing the most directly relevant information to the individual (DiClemente et al., 2001). The use of computer programming allows individuals to enter their own information and receive a tailored response about their behavior quickly and precisely. The sense of privacy associated with responding to questions about alcohol consumption to a computer rather than to an in-person counselor also enhances the candidness of responses, enabling more accurate feedback than interview settings might provide (Duffy & Waterton, 1984). Among military populations, where privacy is at a minimum and alcohol misuse may have implications for one's career, a computerized mode of

delivery for this level of an alcohol misuse behavioral intervention could greatly augment its ability to modify risky behavior by enhancing the user's perception of confidentiality. This article describes the development and user ratings of a web-based, personalized alcohol use assessment and feedback program designed to provide immediate, tailored feedback to a sample of U.S. Marine Corps personnel via their existing Intranet system.

## **Method**

### *Sample*

The participants in this study were active-duty members of three U.S. Marine Corps aviation squadrons located in Southern California. A total of 654 Marines completed the assessment; however, because of deployments related to the military operation Iraqi Freedom, the sample is considerably smaller. Of these participants, 167 provided user ratings. As shown in Table I, participants ranged in age from 18 to 43 with a mean age of 24 years. Enlisted and officer military ranks were represented, with 41% of the sample in the ranks of E1 to E3. Eighty-seven percent of the sample was male and 43% were single. Nearly 46% of the respondents reported their highest level of education as high school, and 53% reported that they had education beyond high school. The sample was demographically representative of the Marine Corps as a whole, with the exception that it included more female Marines and more Marines age 25 or younger (comparison data source: DoD Survey of Health Related Behaviors Among Military Personnel, 1998;  $p < .05$ ). Approximately 72% of the sample reported being drinkers at the time of the user ratings survey, with 40% of those reporting that they drank 5 or more drinks per occasion at least 1 or more times per week.

### *Study Procedures*

Participants were instructed to complete the Intranet program at their computer workstations anytime during a 2- to 3-week access window. Squadron commanders authorized their Marines to complete the program during the workday. Participants' ratings of the program were collected via anonymous survey that was administered as part of a larger study examining the effectiveness of an alcohol misuse prevention training program. Surveys were completed an average of 38 days after finishing the on-line program, depending upon what point in time during the access window subjects finished the program. Data from the actual responses to the computerized assessment were not collected or stored to enhance confidence in the anonymity of the process and strengthen the likelihood of truthful responding. However, participants were required to input a self-generated identification code that was recorded from the program, and on the user ratings survey as well, to allow the researchers to verify that participants who completed the computer assessment also completed a subsequent survey.

### *Web-Based Assessment*

The alcohol assessment questions were developed to assess individual drinking behavior and alcohol-related risk factors. The program began with a short description of its purpose and it emphasized that it was brief, anonymous, secure, and personalized. Users were then asked to enter their self-generated identification code. The first section asked about the number of days per week that the respondents consumed alcohol, and the average number of drinks consumed per day during a typical week over the past 3 months. They were also asked how frequently they drank during the past 30 days. Participants were asked to estimate the percentage of their fellow Marines who were heavy drinkers (defined as 5 or more drinks per occasion 1 or more times per

week) and the percentage of nondrinkers. The standard definition of an alcoholic drink was provided (one 12-ounce bottle of beer or wine cooler, or one 4-ounce glass of wine, or 1 shot glass of 80-proof distilled liquor straight or in a mixed drink). Drinkers and nondrinkers completed this first section.

For participants who indicated that they drank during a typical week in the past 3 months or during the past 30 days, the assessment branched to an item on binge drinking. The frequency of binge drinking was assessed by asking users how many times they drank 4 or more drinks in a row, for women, or 5 or more drinks in a row, for men, in the last 2 weeks (Wechsler et al., 1998). Using items from a previous Department of Defense health behaviors survey series (Bray et al., 1999), users were then asked about the occurrence of alcohol-related problems such as not getting promoted due to drinking, getting a lower score on a performance rating because of drinking, or receiving military punishment because of drinking. In addition, to estimate their blood alcohol level (BAL), the participant was asked about their most recent drinking occasion. The questions addressed the number of drinks they consumed, the amount of time that elapsed between their first and last drink, the type of alcohol they drank, and their weight.

The Alcohol Use Disorders Identification Test (AUDIT), which has been recommended for use among enlisted men in the armed forces (National Institute on Alcohol Abuse and Alcoholism, 1995; Allen et al., 1998), was included in the assessment. The 10-item scale contains three consumption items including quantity and frequency of alcohol use, three alcohol dependence-related items, and four alcohol-related problem items. Nondrinkers were directed to the first two items of the AUDIT to reconfirm their nondrinker status; then they were directed to the final question. Drinkers, and participants who may have initially answered as a nondrinker but then indicated that they drank on either of the first two AUDIT questions, were directed to

complete the full AUDIT scale and then were directed to the final question. The final question asked participants whether the military base where they were stationed was in a location that was considered isolated from a variety of alcohol-alternative activities. At the conclusion of the assessment questions, the user clicked the "continue" button to proceed. Figure 1 depicts a flowchart of the content through which respondents progress in the assessment to receive their feedback.

### *Personalized Feedback*

The beginning of the feedback page stated that this feedback was specific to the participant's responses and it encouraged the individual to print his or her feedback for later reference. Participants were provided with their own average number of drinks per day and a comparison to the average for Marines of their same age group and gender. A similar comparison was provided for the number of days per week that they reported drinking. Comparison data were also provided via both bar graph and text contrasting the respondent's estimate of the percentage of Marines in their same age group and gender that were heavy drinkers and non-drinkers with the actual percentage for each of those categories. The purpose of providing normative data in both of these areas was to help participants gain a more realistic picture of the levels of drinking in the Marine Corps and to increase their motivation for change (Miller & Rollnick, 1991; Agostinelli & Miller, 1994).

Heavy drinking risk information was provided to alert users to the increased danger of injuries, unprotected sex, problems with law enforcement, car crashes, and fights among people who drink 5 or more drinks per occasion at least once per week.



Estimated BAL was provided based upon data entered about the user's last drinking episode, with specific information about the effects of alcohol commonly experienced at that estimated BAL. General alcohol information was provided as well, including facts about legal intoxication levels, underage drinking, safety, myths, depressant effects, and how the body processes alcohol.

Any alcohol-related problems that the participant reported as having experienced were listed, and all participants received practical tips to reduce the negative effects of alcohol. These tips included advice such as alternating alcoholic drinks with nonalcoholic drinks, keeping track of the amount of alcohol consumed, refraining from playing drinking games, arranging to get home before a party or drinking occasion, looking out for friends when drinking, and information about designated drivers. A related section gave feedback to users on how much money they were spending on alcohol. The amount of money spent per year on alcohol was estimated based on their drinking during a typical week to create consciousness about the financial costs of consumption. Their estimated total was also represented to users in terms of what other desirable items they could have purchased with the same amount of money, such as a DVD player, computer or sports equipment, or a down payment on a car.

Among young military personnel, isolation and a sense of "nothing to do" are commonly espoused justifications for increased drinking behavior. Thus, personnel who reported that they were stationed on an isolated military base, such as the Marine Corps Air Ground Combat Center in the desert of Twenty-nine Palms, were given the advice to seek out the Marine Corps Community Services organization located on most bases that sponsors many activities and events. They were also encouraged to pursue educational opportunities that are available on most isolated bases and to consider volunteer work. Participants who reported that they were on bases

that were not isolated from the civilian community were encouraged to explore opportunities for non-alcohol involved activities both on and off of their base, and to seek more information from the local sources. Those reporting being stationed on isolated bases were given suggestions of on-base resources for alcohol-incompatible activities.

All feedback pages concluded with a personalized summary, which outlined the probable level of risk that alcohol posed to the individual Marine's health and career, based upon the responses that they provided. Local resources available to any unit or squadron, such as the substance abuse counseling officer or chaplain, were provided, as well as links to websites for national substance abuse organizations. Civilian medical centers were also recommended as nonmilitary sources of local information. Nondrinkers also received information about potential resources, so they could refer friends or family members who might need further assistance with alcohol misuse prevention. Table II lists all of the content areas included in the participant feedback.

#### *User Ratings Survey*

User ratings were assessed with a paper-and-pencil survey that solicited participants' opinions about the experience of completing the program. Using a 5-point Likert-type scale, participants were asked to rate the Intranet feedback program in four primary areas: ease of use, likeability of the program, usefulness of the program, and how likely they would be to recommend the program to others. Questions using similar 5-point scales were also included to query participants on other aspects and how they rated specific components of the program. Broader questions pertaining to the mode of delivery were included in the survey with a yes and no response format. Users of the program were also asked how many minutes it took to complete the program.

### *Analyses*

Descriptive statistics including frequency and percentage distributions, means, and standard deviations were computed to examine the survey data. Non-drinker status was computed for participants who answered that their typical number of drinks consumed on the days that they drank during the 30 days prior to the survey was zero and that they did not drink on any days during the 30 days prior to the survey. Participants reporting either any drinks or drinking on any number of days during the 30 days prior to the survey were counted as current drinkers. A heavy drinking category was computed for drinkers who reported 5 or more drinks per occasion at least once per week, a definition used in previous Department of Defense reports on alcohol use (Bray et al., 1999). Independent *t* tests were conducted to examine the bivariate associations between the four primary ratings of the program and demographic and alcohol use status variables. It was speculated that participant age, drinking status, and in particular, heavy drinking status would be factors that might affect ratings of the program. An overall rating score was computed by taking the mean of three of the primary rating variables, likeability, usefulness, and likeliness to recommend the program to others, to form a 3-item scale score. The internal consistency for this scale was .93. A multiple linear regression analysis was performed to analyze which independent variables, shown to have a significant bivariate association to ratings, were independently associated with an overall rating of the program.

### **Results**

As presented in Table III, 90% of responders rated the program easy or very easy to use. A total of 41.3% of subjects reported that they liked or very much liked the program. The

remainder neither liked nor disliked the program (28.9%) or somewhat disliked or did not at all like the program (29.7%). When asked how useful the information was in the program, 43.5% of subjects rated the program useful or very useful, and 45.6% of the sample reported that they were likely or very likely to recommend the web site to others. Eighty percent of participants felt that the feedback was appropriate for Marines in their community, and a considerable 85.1% of respondents preferred this mode of receiving alcohol feedback to other modalities, such as classroom or one-on-one training. Given the availability of training for other topic areas in a similar format, 40.1% reported that they would be likely or very likely to use it. Most users reported that it took 6 to 10 minutes to complete the program. Only 18.0% of Marines who completed the program reported printing their feedback page for later review.

Participant age and drinking status were considered to be factors that might affect ratings of the program. Thus, independent *t* tests were performed to examine differences in the primary rating items by age and drinking status (Table IV). Participants ages 25 years old and younger rated the program more useful ( $t = 2.59, df = 117, p < .05$ ) and were more likely to recommend it to others ( $t = 2.26, df = 119, p < .05$ ) than participants ages 26 years and older. There were no significant differences in primary ratings among drinkers and abstainers; however, there was a significant difference in the perceived usefulness of the program among heavy drinkers and non-heavy drinkers. The average usefulness score among subjects who reported that they drank 5 or more drinks per occasion at least 1 or more times per week was 2.7, lower than the average score among non-heavy drinkers, which was 3.4 on a 5-point scale with 5 the highest rating ( $t = 2.08, df = 85, p < .05$ ).

A multiple linear regression analysis was conducted using age and heavy drinking status as the independent variables and the overall program rating score as the dependent variable. This

analysis indicated that both younger participant age and non-heavy drinking status were independently, significantly associated with a higher, more positive overall rating of the program, accounting for 8.6% of the variance in overall rating (Table V).

### **Discussion**

The findings indicate that the use of a computerized assessment and feedback program provided via a Web-based mechanism may be a useful tool to aid in the battle to decrease and prevent alcohol misuse among Marine Corps personnel. The vast majority of Marines rated the program as easy to use and felt that the content was Marine-appropriate.

While the program received moderate positive ratings from the majority of the sample, younger Marines, who are at greater risk for alcohol-related incidents and problems (Bray et al., 1999), rated the program as more useful, were more likely to recommend the program to others, and rated the program overall more positively than those Marines over the age of 25. This result may reflect findings from other studies on characteristics of computer users that show that younger people report more experience and acceptance of computer use (Vandelandotte & DeBourdeauhuij, 2003). Although the demographics of Internet users are beginning to more closely resemble those of greater society (O'Leary, 2000), young males have been using the Internet more extensively than other groups. Hence, it is logical that they would have greater familiarity and ease of use than other groups.

Non-heavy drinkers found the Web-based personalized alcohol feedback program more useful and rated the program overall more positively than heavy drinkers. Issues such as resistance to change or dependency may reduce the likelihood that heavy drinkers will consider the utility of examining their own drinking behavior. Participants who do not report heavy

drinking patterns may be more receptive to information on lowering their alcohol-related risk and therefore consider the program as more useful.

Interestingly, finding the feedback useful did not translate into the behavior of printing out the feedback, as evidenced by the fact that only 18% of users printed their feedback for future use. Since Marines were authorized to complete the training at their workstations during regular working hours, they may not have felt secure that their responses would be confidential if printed on a printer used by other Marines. Many office printers linked to network systems list the names of those with documents in the queue; thus, increasing the likelihood that colleagues could identify which document belongs to which individual. Greater encouragement to print a hard copy of the feedback for further reference, along with the capability for the user to go back and print their responses at a later, more secure time, might increase the likelihood that users would find added benefit from the information that the assessment provides.

### *Conclusions*

There are three primary benefits for using this method of health information delivery that are evident from this research. The first lies in the ability to deliver individualized feedback to a large group of people without the need of trained personnel to distribute it. Clinicians, health educators and other professionals commonly use personalized feedback by calculating risk and relaying that information to clients (Dimeff & McNeely, 2000; Baer et al., 2001; Murphy et al., 2001). However, using an Intranet-based program allows the computer to do the calculation and allows private, personal feedback without direct personal interaction. The trained staff necessary to provide a personalized response is dramatically reduced when a computer is able to deliver the information in a way that is meaningful to the program user.

The aforementioned discomfort that respondents may have in discussing their risky behaviors with another person for the purposes of receiving feedback is also eliminated. In the context of using computerized systems for drug prevention, Barber noted, "self-help materials like these are likely to be the only form of treatment that early stage drug misusers will accept" (Barber, 1990, p. 130). Similarly, one could argue that due in part to the discomfort of speaking with an in-person evaluator, those with issues of alcohol misuse might reasonably be expected to have greater inclination toward receiving information from a computerized assessment such as the one developed for this project. Reduction of any resistance may enhance the learning process and further reduce risk.

Secondly, the program users can access the program at their own convenience to learn about the implications of their behavior and get tips for improving their health. Individuals can log on to the program at anytime of day or night without having to make an appointment to fit someone else's schedule or wait for a designated group training session. Since this type of program is not designed to replace counselors or to serve as a treatment modality, the need to have face-to-face interaction to gain greater understanding about the user's behavior is not necessary. This type of system allows Marines to get training in health-related topics when they need or desire it. The immediate feedback provides information about their own behavior as a tool for their education, as well as potentially for risk reduction and behavioral change purposes.

Additionally, the emphasis on using technology for receiving training and education that can improve health behaviors may keep the attention of younger people who are used to graphics and visual stimuli to hold their interest. Overwhelmingly, Marines indicated that they would prefer this method of receiving information to standard lectures or one-on-one discussions. The current American culture is greatly influenced by visual media and the Internet is one component

of this influence. Providing a tool that is both useful and visually stimulating will increase the likelihood that it will fulfill the intended outcome of education by making it more interesting to the users. Marines can often be heard complaining about having to attend lectures that they find boring or other types of monotonous training. This type of training will have added utility in that it is interactive, and their participation will assist in maintaining their attention while they use it.

It should also be noted that because the Marines were given the option of participating in the assessment as part of their required annual alcohol training, they accessed the Web site to fulfill a training requirement. Therefore, their overall evaluations may reflect a lack of personal interest in the program content. Moreover, the command-requested participation and required training on the subject matter may have fostered resistance to the instrument and, thus, may have led to deflated ratings. In this context, the moderately favorable likeability scores and the indication that 40% would voluntarily access similar training in other topics should be considered quite positive.

### *Limitations*

The primary limitation in this study is the number of participants available to rate the program. Due to war-related deployments, many of those participants who completed the program became unavailable prior to completion of the survey. However, the researchers have no reason to expect that those Marines who were deployed prior to the completion of the survey differed substantially from those who were available at the time of the survey in any way that would have affected their user ratings.

A second limitation lies in the temporal distance between use of the Web-based instrument and actual completion of the user satisfaction survey. This constraint can also be



attributed to the operational tempo of the units involved in this study during the time that the program was being evaluated. With recall bias a potential issue, ratings of the program may represent a somewhat less than accurate description than if the survey had been administered immediately following the program.

### *Future Directions*

The ratings for this computerized assessment in the areas of ease of use, liking of the program, likelihood to recommend the site to others, and usefulness of the feedback information, indicate that it is a promising mechanism to provide interactive, personalized alcohol use information. Future research should evaluate how effective similar web-based feedback programs are at modifying alcohol use behaviors, risk factors, and related outcomes. In particular, further research utilizing a controlled experiment to evaluate the effectiveness of this program on modifying alcohol use behaviors should be conducted. In addition to introducing similar programs for other topic areas, another next step would be to explore generalizability to other military personnel, families, and civilians. Another direction for future study is to assess the most efficacious way to integrate this type of prevention tool into larger prevention programs.

A short Web-based assessment and feedback instrument can be integrated easily into other health intervention programs. Because alcohol misuse prevention has been shown to be more effective when multi-method strategies are used to reduce problem behavior, tools like this are meant to be just one part of a multi-component program (Cohen, 2000; Wechsler et al., 2000). Beyond creating awareness through this type of Web-based program as a stand-alone product, media efforts, small group or lecture-style training, environmental modifications,

counseling, and many other tactics can be combined with computerized assessments to reduce risky alcohol-related behaviors. Web-based programs are one dimension of a systemic health enhancement strategy that may fill a gap left by other intervention tools. When effectively designed programs are readily available, health professionals can evaluate the integration of existing web-based programs into their health enhancement strategy. Or they can design new Web-based programs as the technology needed to do so becomes increasingly accessible and user-friendly. The potential usefulness of effective computerized assessment and feedback tools makes them an avenue that should be explored in the development or modification of future alcohol misuse prevention plans.

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## References

- Agostinelli, G., Brown, J. M., and Miller, W.R. (1995) Effects of normative feedback on consumption among heavy drinking college students. *Journal of Drug Education*, **25**, 31-40.
- Agostinelli, G. and Miller, W. R. (1994) Drinking and thinking: How does personal drinking affect judgments of prevalence and risk? *Journal of Studies on Alcohol*, **55**, 327-337.
- Allen, J. P., Cross, G. M, Fertig, J. B. and Litten R. Z. (1998) Screening for alcohol problems in the military: recommended tests. *Military Medicine*, **163**, 9-12.
- Baer, J. S., Marlatt, A., Kivlahan, D. R., Fromme, K., Larimer, M.E. and Williams, E. (1992) An experimental test of three methods of alcohol reduction with young adults. *Journal of Consulting and Clinical Psychology*, **60**(6), 974-979.
- Baer, J. S., Kivlahan, D. R., Blume, A.W., McKnight, P. and Marlatt, A. (2001) Brief intervention for heavy-drinking college students: 4-year follow-up and natural history. *American Journal of Public Health*, **91**, 1310-1316.
- Barber, J. G. (1990) Computer-assisted drug prevention. *Journal of Substance Abuse Treatment*, **7**, 125-131.
- Bien, T. H., Miller, W. R. and Tonigan S. (1993) Brief interventions for alcohol problems: a review. *Addiction*, **88**, 315-336.
- Borsari, B. and Carey, K. B. (2000) Effects of a brief motivational intervention with college student drinkers. *Journal of Consulting and Clinical Psychology*, **68**, 728-733.
- Bray, R. M., Sanchez, R. P, Ornstein, M. L., Lentine, D., Vincus, A. A., Baird, T. U., Walker, J. A., Wheelless, S. C., Guess, L. L., Kroutil, L. A. and Iannacchione, V. G. (1999) 1998

- Department of Defense Survey of Health Related Behaviors Among Military Personnel*  
(Report No. RTI/7034/006-FR). Research Triangle Institute, Research Triangle Park, NC.
- Brug, J., Campbell, M. and Van Assema, P. (1999) The application and impact of computer-generated personalized nutrition education: a review of the literature. *Patient Education and Counseling*, **36**, 145-156.
- Cassell, M. M., Jackson, C. and Cheuvront, B. (1998) Health communications on the Internet: an effective channel for health behavior change? *Journal of Health Communication*, **3**, 71-79.
- Cloud, R. N. and Peacock, P. L. (2001). Internet screening and interventions for problem drinking: Results from the www.carebetter.com pilot study. *Alcoholism Treatment Quarterly*, **19**, 23-44.
- Cunningham, J.A., Humphreys, K., and Koski-Jannes A. (2000) Providing personalized assessment feedback for problem drinking on the Internet: a pilot project. *Journal of Studies on Alcohol*, **61**: 794-798.
- DiClemente, C. C., Marinilli, A. S., Singh, M. and Bellino, L. E. (2001) The role of feedback in the process of health behavior change. *American Journal of Health Behavior*, **25**, 217-227.
- Dimeff, L. A. and McNeely, M. (2000). Computer-enhanced primary care practitioner advice for high-risk college drinkers in a student primary health-care setting. *Cognitive and Behavioral Practice*, **7**, 82-100.
- Duffy, J. C. and Waterton, J. J. (1984) Under-reporting of alcohol consumption in sample surveys: the effect of computer interviewing in fieldwork. *British Journal of Addiction*, **79**, 303-308.

- Miller, W. R. and Rollnick, S. (1991) *Motivational interviewing: preparing people to change addictive behavior*. Guilford Press, New York.
- Murphy, J. G., Duchnick, J. J., Vuchinich, R. E., Davison, J. W., Karg, R. S., Olson, A. M., Smith, A. F. and Coffey, T. T. (2001) Relative efficacy of a brief motivational intervention for college student drinkers. *Psychology of Addictive Behaviors*, **15**, 373-379.
- National Institute on Alcohol Abuse and Alcoholism (1995) *Assessing Alcohol Problems. A Guide for Clinicians and Researchers. National Institute on Alcohol Abuse and Alcoholism Treatment Handbook Series 4*. (NIH Publication No. 95-3745). U.S. Department of Health and Human Services, National Institutes of Health, Rockville, MD.
- O'Leary, M. (2000). Web goes mainstream for everybody. *Online*, **24**, 80-82.
- Vandelanotte, C. and DeBourdeauhuij, I. (2003) Acceptability and feasibility of a computer-tailored physical activity intervention using stages of change: Project FAITH. *Health Education Research*, **18**, 304-317.
- Walters, S. T. (2000) In praise of feedback: an effective intervention for college students who are heavy drinkers. *Journal of American College Health*, **48**, 235-238.
- Wechsler, H., Dowdall, G. W., Maenner, G., Gledhill-Hoyt, J. and Lee, H. (1998) Changes in binge drinking and related problems among American college students between 1993 and 1997: results of the Harvard School of Public Health College Alcohol Study. *Journal of American College Health*, **47**, 57-68.
- Wechsler, H., Kelley, K., Weitzman, E. R., San Giovanni, J. P. and Seibring, M. (2000) What colleges are doing about student binge drinking. *Journal of the American College Health*, **48**, 219-226.

Table I

<u>Demographic Information</u>		
	N	%
<u>Gender</u>		
Male	138	87.3
Female	20	12.7
<u>Age</u>		
(mean=24.5, range 18-43, SD=5.56)		
≤ 25 years	115	72.8
> 25 years	43	27.2
<u>Rank</u>		
E1-E3	66	41.0
E4-E5	66	41.0
E6 and above	29	18.0
<u>Marital Status</u>		
Married or living as married	78	49.4
Separated or divorced	12	7.6
Single, never married	68	43.0
<u>Ethnic Background</u>		
White	108	67.9
Hispanic	23	14.5
Black	11	6.9
Other	17	10.7
<u>Education</u>		
Less than high school	2	1.2
High School	74	46.0
Greater than high school	85	52.8

Table II

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**Web-based alcohol misuse prevention program feedback content**

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Average drinks per day and days drink per week with comparisons to population means  
Perceived percentages of heavy drinkers and non-drinkers compared to actual population percentages  
Heavy drinking information and risks  
Alcohol-related problems  
Blood alcohol level estimate based on recent drinking occasion  
Estimated money spent on alcohol  
Tips for reducing alcohol-related problems  
Personalized summary  
Resources for further information

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Table III

Frequency distributions and means for user rating items

Response Options Item	% 1 2 3 4 5					No	Yes	Mean	SD	n
Ease of use <sup>a</sup>	0.0	1.6	8.9	14.5	75.0	-	-	4.63	0.72	124
Likeability <sup>b</sup>	19.0	10.7	28.9	15.7	25.6	-	-	3.18	1.43	121
Usefulness <sup>c</sup>	17.2	14.8	24.6	18.9	24.6	-	-	3.19	1.41	122
Recommend to others <sup>d</sup>	16.8	9.6	28.0	23.2	22.4	-	-	3.25	1.36	125
Use similar program for other health topics <sup>e</sup>	17.1	9.4	33.3	16.2	23.9	-	-	3.21	1.37	117
Time to complete Program <sup>f</sup>	28.9	33.6	23.4	12.5	1.6	-	-	2.24	1.06	128
Appropriate feedback	-	-	-	-	-	19.8	80.2	1.20	0.40	111
Prefer internet over other modes	-	-	-	-	-	14.9	85.1	1.85	0.36	121
Print feedback	-	-	-	-	-	81.5	18.5	1.82	0.39	119

<sup>a</sup> 1 = Very difficult, 3 = Neither difficult nor easy, 5 = Very easy.<sup>b</sup> 1 = Not at all, 3 = Neither liked nor disliked, 5 = Very much.<sup>c</sup> 1 = Not at all useful, 3 = Neither useful nor useless, 5 = Very useful.<sup>d</sup> 1 = Not at all likely, 3 = Neither likely nor unlikely, 5 = Very likely.<sup>e</sup> 1 = Not at all likely, 3 = Neither likely nor unlikely, 5 = Very likely.<sup>f</sup> 1=1-5minutes, 2 = 6-10 minutes, 3 = 11-15minutes, 4 = 16-20minutes, 5 = >20 minutes



Table IV

Mean primary user ratings by age and drinking status

Item	Age						
	<25 years (n = 86)		>25 years (n = 33)		t	df	p
	Mean	SD	Mean	SD			
Ease of use	4.63	0.76	4.64	0.60	-.028	118	.978
Likeability	3.32	1.48	2.77	1.28	1.83	116	.069
Usefulness	3.37	1.45	2.64	1.22	2.59	117	.011
Recommend to others	3.41	1.43	2.79	1.08	2.27	119	.025

Item	Drinking Status						
	Drinker (n=118)		Non-Drinker (n=47)		t	df	p
	Mean	SD	Mean	SD			
Ease of use	4.61	0.75	4.67	0.63	0.40	121	.688
Likeability	3.09	1.52	3.34	1.16	0.87	118	.386
Usefulness	3.13	1.45	3.29	1.32	0.59	119	.558
Recommend to others	3.18	1.39	3.35	1.30	0.63	122	.531

Item	Heavy Drinking Status						
	Non-Heavy Drinker (n=71)		Heavy Drinker(n=47)		t	df	p
	Mean	SD	Mean	SD			
Ease of use	4.65	0.72	4.55	0.80	0.62	85	.540
Likeability	3.24	1.44	2.89	1.62	1.07	83	.288
Usefulness	3.39	1.37	2.75	1.48	2.08	85	.040
Recommend to others	3.42	1.30	2.86	1.46	1.88	85	.064

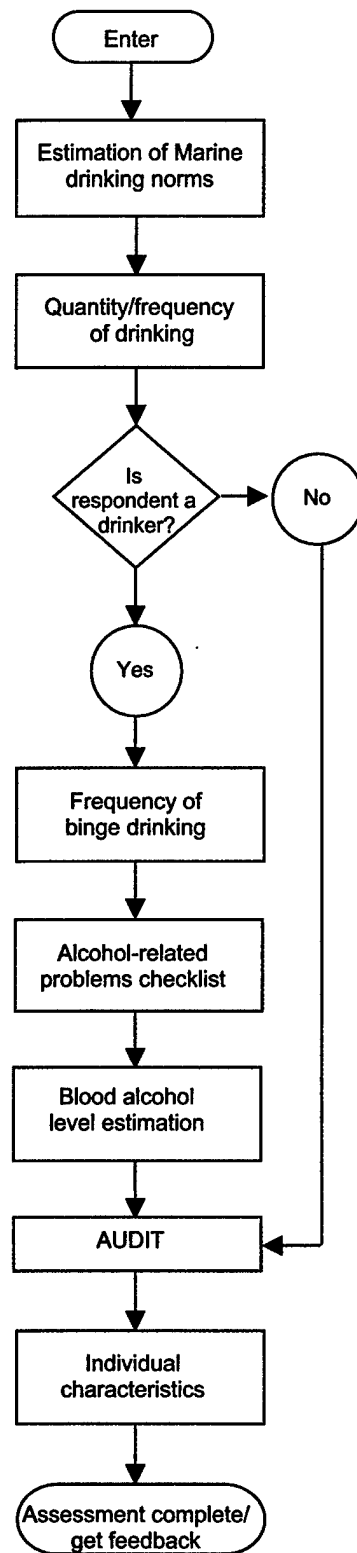
Table V

Multiple linear regression on overall rating of program

	Regression Statistics			
	R	R <sup>2</sup>	Beta	Sig
Independent variables				
Heavy drinker status	.293 <sup>a</sup>	.086 <sup>a</sup>	-.211	.019
Age			-.222	.013

<sup>a</sup> For both predictors: heavy drinker status, age.

Figure 1. Flowchart for the Web-Based Alcohol Misuse Prevention Assessment



## REPORT DOCUMENTATION PAGE

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<b>14. ABSTRACT (maximum 200 words)</b>  The use of web-based programs for health education, risk reduction, and health promotion can be a valuable tool in the effort to improve the health of a population. Providing personalized feedback through such a method can be particularly useful in alcohol misuse prevention efforts. A brief alcohol use feedback program was developed for members of the U.S. Marine Corps and user-satisfaction ratings were collected from 167 participants. Approximately 44% of the sample found the program to be useful or very useful and 46% of the sample reported that they were likely or very likely to recommend the web site to others. The Web-based format with tailored responses was preferred by 85% of respondents over other more traditional methods of alcohol training, and 80% of participants felt that the feedback was appropriate for Marines in their community. Significantly higher usefulness, likelihood of recommending the program to others, and overall ratings of the program were reported among younger and non-heavy-drinking participants ( $p < .05$ ). Results indicate that this computerized assessment and feedback program is a promising mechanism with which to provide personalized alcohol misuse prevention information.					
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